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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/575,734	04/13/2006	Gerhard Hoerpel	287299US0PCT	1677

22850 7590 01/30/2008

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EXAMINER	
THOMAS, ERIC W	

ART UNIT	PAPER NUMBER
2831	

NOTIFICATION DATE	DELIVERY MODE
01/30/2008	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/575,734	HOERPEL ET AL.	
	Examiner	Art Unit	
	Eric Thomas	2831	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *01 June 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *22-42* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *22-27,29,30 and 33-42* is/are rejected.

7)☒ Claim(s) *28,31 and 32* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *8/06, 12/06, 6/07*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Specification

1. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Objections

2. Claims 29-32 are objected to because of the following informalities:

Applicant is required to define Dg in claims 29-30

Claim 31 recites the limitation "the porous positive electrode" in line 3. There is insufficient antecedent basis for this limitation in the claim.

Claim 32 recites the limitation "the porous positive electrode" in line 3. There is insufficient antecedent basis for this limitation in the claim.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 22-27, 29-30, 34-42 are rejected under 35 U.S.C. 103(a) as being obvious over Hennige et al. (WO 03/073534) in view of Hirahara et al. (US 6,094,338).

Hennige et al. disclose a separator for use in a system in which electrodes have to be separated from one another, wherein the separator is present on a carrier and is adhered thereto and is a porous inorganic nonelectroconductive coating which comprises particles of compounds of the elements Al, Si and/or Zr that are adhered to each other and to the carrier by an inorganic adhesive.

Hennige et al. disclose the claimed invention except that the separator is used in a capacitor.

Hirahara et al. teach that a capacitor requires a separator disposed between two electrodes.

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to form the separator of Hennige et al. in a capacitor, since such a modification would form a capacitor having an improved separator.

Regarding claim 23, Hennige et al. disclose the carrier comprises woven or non-woven polymeric or glass fibers (see paragraph 29 of corresponding US publication 2005/084761).

Regarding claim 24, Hennige et al. disclose the carrier is flexible and less than 50 μm in thickness (see paragraph 30 of corresponding US publication 2005/0084761).

Regarding claim 25, Hennige et al. disclose the polymeric fibers are selected from fibers of polyacrylonitrile, polyamide, polyester and/or polyolefin (see paragraph 27 of corresponding US publication 2005/084761).

Regarding claim 26, the modified Hennige et al. disclose the carrier is an electrode configured for use as an electrode in a capacitor (separator is formed on an electrode).

Regarding claim 27, the modified Hennige et al. disclose the carrier is a porous electrode configured for use as an electrode for a capacitor (separator is formed on a porous electrode).

Regarding claim 29, the modified Hennige et al. disclose the separator layer has a thickness of less than 100 D_g and not less than 1.5 D_g (see paragraphs 30, 48 of corresponding US publication 2005/0084761).

Regarding claim 30, the modified Hennige et al. disclose the separator has a thickness of less than 20 D_g and not less than 5 D_g (see paragraphs 30, 48 of corresponding US publication 2005/0084761).

Regarding claim 34, Hennige et al. disclose the separating layer has a porosity in the range from 30% to 70% (see paragraph 31 of corresponding US publication 2005/084761).

Regarding claim 35, Hennige et al. disclose the inorganic adhesives are selected from oxides of the elements Al, Si and/or Zr (see paragraph 49 of corresponding US publication 2005/084761).

Regarding claim 36, Hennige et al. disclose the inorganic adhesive comprises particles having an average particle size of less than 20 nm and was produced via a particulate sol or comprises an inorganic network of the oxides which was produced via a polymeric sol (see paragraphs 47-48 of corresponding US publication 2005/084761).

Regarding claim 37, Hennige et al. disclose an inorganic network comprising silicon, the silicon of the network being bonded via oxygen atoms to the oxides of the inorganic coating and via an organic radical to the carrier which comprises polymeric fibers (see paragraph 49-57 & table of corresponding US publication 2005/084761).

Regarding claim 38, Hennige et al. disclose adhered particles of the compounds of the elements Al, Si and/or Zr that are present in the separator have an average particle size in a range from 0.5 to 10 µm.

Regarding claim 39, Hirahara et al. teach that the capacitor comprises propylene carbonate solvent and tetraalkylammonium salt (see col. 11 lines 40-67, col. 12 lines 1-24).

Regarding claim 40, the modified Hennige et al. disclose the claimed invention. The limitation, "obtainable by applying a suspension to the carrier and solidifying the

suspension on and in the carrier by at least single heating, the suspension comprising a sol" is a method of forming the device. The method of forming the device is not germane to the issue of patentability of the device itself. Therefore, this limitation has not been given patentable weight. In re STEPHENS, WENZL, AND BROWNE, 145 USPQ 656 (CCPA 1965).

Regarding claim 41, the modified Hennige et al. disclose the claimed invention. The limitation, "the suspension is heated on the carrier at a temperature in the range from 170 to 280°C for from 0.5 to 10 minutes" is a method of forming the device. The method of forming the device is not germane to the issue of patentability of the device itself. Therefore, this limitation has not been given patentable weight. In re STEPHENS, WENZL, AND BROWNE, 145 USPQ 656 (CCPA 1965).

Regarding claim 42, the modified Hennige et al. disclose the energy storage device can be used for storing electrical energy in vehicles (see paragraph 62).

6. Claims 22-24, 26-27, 29-30, 34-35, 38-42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hennige et al. (WO 03/021697) in view of Hirahara et al. (US 6,094,338).

Hennige et al. disclose a separator for use in a system in which electrodes have to be separated from one another, wherein the separator is present on a carrier and is adhered thereto and is a porous inorganic nonelectroconductive coating which comprises particles of compounds of the elements Al, Si and/or Zr that are adhered to each other and to the carrier by an inorganic adhesive (see paragraph 45 of corresponding US publication 2005/0031942).

Hennige et al. disclose the claimed invention except that the separator is used in a capacitor.

Hirahara et al. teach that a capacitor requires a separator disposed between two electrodes.

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to form the separator of Hennige et al. in a capacitor, since such a modification would form a capacitor having an improved separator

Regarding claim 23, Hennige et al. disclose the carrier comprises woven or non-woven polymeric or glass fibers (see paragraph 45 of corresponding US publication 2005/0031942).

Regarding claim 24, Hennige et al. disclose the carrier is flexible and less than 50 μm in thickness (see paragraph 27 of corresponding US publication 2005/0031942).

Regarding claim 26, the modified Hennige et al. disclose the carrier is an electrode configured for use as an electrode in a capacitor (separator is formed on an electrode).

Regarding claim 27, the modified Hennige et al. disclose the carrier is a porous electrode configured for use as an electrode for a capacitor (separator is formed on a porous electrode).

Regarding claim 29, the modified Hennige et al. disclose the separator layer has a thickness of less than 100 D_g and not less than 1.5 D_g (see paragraphs 27, 54 of corresponding US publication 2005/0031942).

Regarding claim 30, the modified Hennige et al. disclose the separator has a thickness of less than 20 D_g and not less than 5 D_g (see paragraphs 27, 54 of corresponding US publication 2005/0031942).

Regarding claim 34, Hennige et al. disclose the separating layer has a porosity in the range from 30% to 70% (see paragraph 36 of corresponding US publication 2005/0031942).

Regarding claim 35, Hennige et al. disclose the inorganic adhesives are selected from oxides of the elements Al, Si and/or Zr (see paragraph 44 of corresponding US publication 2005/0031942).

Regarding claim 38, Hennige et al. disclose adhered particles of the compounds of the elements Al, Si and/or Zr that are present in the separator have an average particle size in a range from 0.5 to 10 µm (see paragraph 54 of corresponding US publication 2005/0031942).

Regarding claim 39, Hirahara et al. teach that the capacitor comprises propylene carbonate solvent and tetraalkylammonium salt (see col. 11 lines 40-67, col. 12 lines 1-24).

Regarding claim 40, the modified Hennige et al. disclose the claimed invention. The limitation, "obtainable by applying a suspension to the carrier and solidifying the suspension on and in the carrier by at least single heating, the suspension comprising a sol" is a method of forming the device. The method of forming the device is not germane to the issue of patentability of the device itself. Therefore, this limitation has

not been given patentable weight. In re STEPHENS, WENZL, AND BROWNE, 145 USPQ 656 (CCPA 1965).

Regarding claim 41, the modified Hennige et al. disclose the claimed invention. The limitation, "the suspension is heated on the carrier at a temperature in the range from 170 to 280°C for from 0.5 to 10 minutes" is a method of forming the device. The method of forming the device is not germane to the issue of patentability of the device itself. Therefore, this limitation has not been given patentable weight. In re STEPHENS, WENZL, AND BROWNE, 145 USPQ 656 (CCPA 1965).

Regarding claim 42, the modified Hennige et al. disclose the energy storage device can be used for storing electrical energy in vehicles.

Allowable Subject Matter

7. Claims 28, 31-33 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

8. The following is a statement of reasons for the indication of allowable subject matter: The prior art does not teach or suggest (in combination with the other claim limitations) a capacitor wherein the metal oxide particles which have a particle size which is smaller than the pores of the porous electrode (claims 28, 31-33).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eric Thomas whose telephone number is 571-272-1985. The examiner can normally be reached on Monday - Friday 5:30 AM - 2:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Diego Gutierrez can be reached on 571-272-2245. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

et

1-15-08

Eric Thomas

Primary Examiner – 2831